From:	Ken Bird
To:	Butler, Elizabeth
Cc:	Tom Ebbert (ebbert@ppg.com); Feinberg, Richard [C]; Sara Taylor; Brad Zewe
Subject:	RIP Superfund Site - Sewer QAPP Addendum
Date:	Friday, November 17, 2017 3:05:32 PM
Attachments:	S-23 Sewer Water Sampling SOP.pdf 2017.11.17_QAPP Addendum.pdf Figures 1-3.pdf

Good afternoon Elizabeth,
On behalf of PPG, attached is the QAPP addendum pertaining to sewer water samples (per Work Plan section 6.1.4). If you would like a paper copy or PDF on a CD let me know and we will send it to you.

Please direct comments to Tom Ebbert.

Ken

Ken Bird, CIH, LSRP
Woodard & Curran
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Main – 412-241-4500
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9. QAPP WORKSHEET #9 – PROJECT SCOPING SESSION PARTICIPANTS SHEET

Project Name: Riverside Industrial Park Superfund Site **Projected Date(s) of Sampling:** Anticipated approximately 2-3 weeks following QAPP modification approval **Project Manager:** Kenneth Bird	**Site Name:** Riverside Industrial Park Superfund Site **Site Location:** Newark, New Jersey
Date of Session: September 5 through November 16, 2017 (as needed) **Scoping Session Purpose:** Discussed RI tasks and current site conditions	

Name	Title	Affiliation	Phone #	E-mail Address	Project Role
Kenneth Bird	Vice President	Woodard & Curran	(412) 241-4500	kbird@woodardcurran.com	Project Manager
Brad Zewe	Project Manager	Woodard & Curran	(412) 241-4500	bzewe@woodardcurran.com	Task Manager
Katelynn Keen	Scientist 2	Woodard & Curran	(609) 608-0688	kkeen@woodardcurran.com	Scientist
Sara Taylor	Project Technical Specialist	Woodard & Curran	(609)-608-0548	staylor@woodardacurran.com	Quality Control
Raine Jones	Assistant Project Geologist	Woodard & Curran	(412) 241-4500	rjjones@woodardcurran.com	Field Lead
Tom Ebbert	Manager, Remediation	PPG	(724) 325-5062	ebbert@ppg.com	Project Coordinator
Rich Feinberg	Project Manager	PPG	(732) 233-4552	fernberg@ppg.com	Assistant Project Coordinator

Comments/Decisions: Site observations, geophysical survey, and discussions were started September 5, 2017.

Action Items: Develop sewer water sample program. Prepare QAPP addendum for sewer water.

Consensus Decisions: NA

17. QAPP WORKSHEET #17 – SAMPLING DESIGN AND RATIONALE

QAPP Worksheet #17 – Sampling Design and Rationale

Describe and provide a rationale for choosing the sampling approach (e.g., grid system, biased statistical approach). Describe the sampling design and rationale in terms of what matrices will be sampled, what analytical groups will be analyzed and at what concentration levels, the sampling locations (including QC, critical, and background samples), the number of samples to be taken, and the sampling frequency (including seasonal considerations):

Sewer Water Sampling

Onsite subsurface piping, including sewers, were evaluated based upon observation, geophysical survey results, and historical maps to identify and confirm possible sewer water sample locations.

- Rationale for sampling approach: Sampling based on existing location of subsurface piping with sewer water present and access points. An objective of sewer water sample collection is to provide sewer water quality data not influenced by the river.
- Matrix: Aqueous (sewer water)
- Analytical Group: VOC, SVOC, PCB Aroclors, and Metals (including cyanide). No change from QAPP Rev. 3.

The sewer system evaluation with respect to sewer water samples is provided in the following attachments.

1. Subsurface Structures Summary: Table 1 summarizes 21 existing manholes, vaults, or catch basins identified in September 2017. The locations are shown on Figure 1.
2. Photograph: Photographs of the existing subsurface structures listed in the Table 1 summary are provided in this attachment.
3. Sewer Pipes and Subsurface Anomalies Maps: A map of the sewer system at the Site based upon observations, historical maps, and geophysical survey findings are presented on Figures 2 and 3. The maps also include subsurface anomalies reported during the geophysical survey whose cause is not known. Causes of anomalies could be discarded debris, abandoned underground utilities (power, gas, water), current abandoned underground utilities, sewer pipes, and/or underground transfer pipes. Table 2 lists the sewer pipes and subsurface anomalies noted on the figures.
4. Sewer Water Samples Rationale:
   - Manholes 1 and 2 – Because these manholes are related to the Herbert Place CSO which is tidal influenced by the Passaic River, no samples are proposed at these locations.
   - Manholes 5, 8, 10, 16 or 17 - These manholes are related to the sewer system and had liquids present in September 2017. Sewer water samples are proposed are these locations. Because Manholes 16 and 17 are connected to each other, at the time of sampling the manhole with the best opportunity to collect a sample will be selected for sampling. At the time of sampling if insufficient water is available for sampling, no sewer water samples will be collected at the "insufficient water" manholes.
   - Vaults 15, 20 - Although these vaults are not currently interpreted to be associated with the sewer system they did contain liquids in September 2017. Some of these vaults have wall openings with seepage stains. They will be sampled as being reflective of a possible contaminant pathway. At the time of sampling if insufficient water is available for sampling, no sewer water samples will be collected at the "insufficient water" vaults.
   - The other manholes and vaults listed in Subsurface Structures Summary did not contain sewer water. No sewer water sampling proposed.

18. QAPP WORKSHEET #18 – SAMPLING LOCATIONS AND METHODS/SOP REQUIREMENTS TABLE

A summary of the sampling events, anticipated sampling locations and numbers of samples to be collected, matrices, sample depth, laboratory analyses, QC samples, sampling SOP reference, and brief rationale for sampling will be provided in a table similar to QAPP Worksheet #18 to be included with each work plan requiring sample collection and analysis.

Sampling Location/ Designation	Matrix	Sample Type	Sample Depth (bgs)	Analytical Group[1] (EPA Analytical Method) (See QAPP Worksheet #15)	Number of Samples / Frequency	Number of Quality Control Samples[2]	Sampling SOP Reference[(a)]	Rationale for Sampling Location
Sewer – Lot 62-5	Water	Grab	TBD	VOCs + TICs, SVOCs + TICs, Metals, Cyanide, PCBs (water quality)	1	Worksheet #20	Worksheet #21	Liquid present, sewer manhole
Sewer – Lot 1-8	Water	Grab	TBD	VOCs + TICs, SVOCs + TICs, Metals, Cyanide, PCBs (water quality)	1	Worksheet #20	Worksheet #21	Liquid present, sewer manhole
Sewer – Lot 1-10	Water	Grab	TBD	VOCs + TICs, SVOCs + TICs, Metals, Cyanide, PCBs (water quality)	1	Worksheet #20	Worksheet #21	Liquid present, sewer manhole
Sewer – Lot 5-15	Water	Grab	TBD	VOCs + TICs, SVOCs + TICs, Metals, Cyanide, PCBs (water quality)	1	Worksheet #20	Worksheet #21	Liquid present, subsurface vault
Sewer – Lot 1-20	Water	Grab	TBD	VOCs + TICs, SVOCs + TICs, Metals, Cyanide, PCBs (water quality)	1	Worksheet #20	Worksheet #21	Liquid present, subsurface vault
Sewer – Lots 57-16 Or Sewer – Lot 1-17	Water	Grab	TBD	VOCs + TICs, SVOCs + TICs, Metals, Cyanide, PCBs (water quality)	1	Worksheet #20	Worksheet #21	Liquid present, sewer manhole

20. QAPP WORKSHEET #20 – FIELD QUALITY CONTROL SAMPLE SUMMARY TABLE

Matrix	Analytical Group[2]	Analytical and Preparation SOP Reference	No. of Sampling Locations	No. of Field Duplicate Pairs	No. of Equip. Blanks[1]	No. of VOC Trip Blanks	No. of Field MS/MSD Samples	Total No. of Field Samples to Lab
Sewer Water	VOCs + TICs	Refer to Worksheets 12 and 23	Refer to Worksheet 18	1 per 20 samples	1 per event	1 per cooler[3]	1 per 20 samples	6 locations x 1 sample per location = 6 sewer water samples
	SVOCs + TICs			1 per 20 samples	1 per event	NA	1 per 20 samples	
	PCBs			1 per 20 samples	1 per event	NA	1 per 20 samples	
	Metals (Including Mercury)			1 per 20 samples	1 per event	NA	1 per 20 samples	
	Cyanide			1 per 20 samples	1 per event	NA	1 per 20 samples	

21. QAPP WORKSHEET #21 – PROJECT SAMPLING SOP REFERENCES TABLE

QAPP Worksheet #21 – Project Sampling SOP References Table

Reference Number	Title, Revision Date and/or Number*	Originating Organization	Equipment Type	Modified for Project Work? (Y/N)**	Comments
S-23	**Sewer Water Sample Collection**	**Woodard & Curran**	Sample containers and labels. Sample collection device (a certified clean, laboratory provided sample transfer container; a dipper or pond sampler; a peristaltic pump; or a stainless-steel Bomb Sampler). Peristaltic Pump will be used with Teflon or Teflon-lined tubing and silicon pump head tubing, if chosen as the sampling device. Personal protective clothing and equipment. Photo ionization detector (PID), as appropriate. Nylon rope or pole. Flashlight. Water level indicator. MultiParameter meter. Manhole cover lifting device (magnetic or manual). Decontamination equipment and supplies.	**No**	

TABLE 1
SUBSURFACE STRUCTURES SUMMARY – NOVEMBER 2017
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Manhole/Vault/ Catch Basin ID	Description/Observations
Manhole 1	Manhole has a round, steel lid. Construction included a stone interior with steel opening, and a line was found running east/west toward river. The sewer lined up with the outfall identified previously along the berm and with Manhole 2. The manhole opening is approximately 2' in diameter with bottom width approximately 4-5'. The top of pipe was at a depth of approximately 3' below ground surface (bgs), and the bottom is approximately 7' bgs. The water inside was identified to be tidally influenced by the river. On historical maps, this is identified as Herbert Place CSO. Lot 65.
Manhole 2	Manhole was identified as open and covered by a wooden board. Construction included a stone interior with steel opening, and a line was found running east/west toward the river. The sewer lined up with the outfall identified previously along the berm and with Manhole 1. The manhole opening is approximately 2' in diameter with bottom width approximately 4-5'. The top of pipe was at a depth of approximately 3' bgs, and the bottom is approximately 7' bgs. The water inside was identified to be tidally influenced by the river. On historical maps, this is identified as Herbert Place CSO. Lot 63.
Manhole 3	Manhole is sealed with concrete to the surface. No observed pipes run through manhole but unidentified subsurface anomaly and gas line are near it. Lot 64.
Manhole 4	Concrete-walled manhole contains debris and is covered by wooden board. An opening was identified 2' bgs to the northeast which is suspected to connect to Manhole 5 to the north. This opening was blocked. A 6" diameter polyvinyl chloride pipe was found to the southwest with a cap approximately 2' bgs pointing in the direction of Building 12. When traced, the 6” line was found to run along Building 7 and under the debris pile near Building 17. Based upon Passaic Valley Sewerage Commission records, this manhole is believed to be part of the modified sewer piping used by the Lot 66/Building 17 owner in 1997. Lot 63.
Manhole 5	The concrete-walled manhole was covered with plywood. There is liquid at the bottom. A pipe/opening was found, approximately 6" diameter with no distinct edge. The depth was approximately 2’ bgs facing south, and the pipe may connect to Manhole 4. When attempts were made to trace the line, it was found that the pipe to the south was blocked and filled with dirt. There is the possibility of another pipe opening below the water table in the north wall, but this could not be confirmed. Lot 62.
Vault 6	The vault was found with plywood covering it. Inside, there were two shut-off valves connected to the water main. No visible piping was found, but geophysical survey identified a water pipe running north/south and a subsurface anomaly running through the manhole in the east/west direction. Lot 64.
Vault 7	Vault was found to be sealed with concrete. A water line was identified by the geophysical survey that passes either through or near the vault running north/south. Lot 64.

Manhole/Vault/ Catch Basin ID	Description/Observations
Manhole 8	Manhole was identified with a round, steel top covering a metal vault approximately 4' by 4'. Steel "L" shaped bars (i.e., pipe hangers?) were identified within vault, though their purpose is unknown. Water and sediment were present within the base of the manhole, and to the south/southeast of the manhole, nine pipes were identified. Each pipe had a 4" diameter steel construction. Of the nine pipes identified, only one line (line L) could be traced (others blocked). Line L travels out south/southeast wall toward Building 9. Manhole depth is approximately 6'. Lot 1.
Vault 9	Vault was found with a secure closure with square metal top. Approximately 1' bgs, electric lines within 1" piping were found running north/south. At a depth of 4' bgs at the base of manhole, there is a circular valve. No visible piping was attached to the circular valve. Lot 62.
Manhole 10	A round, steel manhole lid approximately 3' diameter covered this manhole. A large sump system was located in the center of the vault, and liquid was found in the bottom. A pump, discharge piping and electrical wiring is present. This equipment does not appear to be in working condition. To the south, a 4" steel pipe was connected to a sump running south and an 8" pipe was observed to the right of the sump running south. To the west, there were five cut electric lines, each 1-2" diameter. Manhole depth is approximately 8'. Lot 1.
Catch Basin 11	Steel stormwater grate. Filled with soil/debris. Lot 57.
Vault 12	Concrete slabs cover this vault which contains a fire hydrant. Lot 60.
Vault 13	Vault top consisted of 4 metal plates, each approximately 3' x 1.25' in Lot 1 parking area. A fire hydrant was found on southern side, and on the northern side, there was a broken 4" pipe entering from the northeast direction. The top split into a "Y" shape, and water was pooled in the broken pipe. Sediment was located in the bottom of vault. On southwest corner, a 4" diameter steel pipe cut through at an angle approximately 1.5-2' bgs. Vault is concrete. Lot 1.
Vault 14	Vault lid is round and steel. Vault is concrete. A water main was found on the west side of manhole, attached to a 12" diameter pipe approximately 5' bgs running east/west. A 2' bgs 4" steel water service line was identified running east/southeast to west/northwest, and an electric line conduit of 1" diameter was found on the west side of the vault. Lot 1.
Vault 15	Vault lid is a round and steel manhole approximately 3' diameter. A square concrete vault was located inside with a total depth of approximately 8' bgs. In east/northeast corner, there are two 4" steel pipes at the base of the manhole. Wet sediment was present at the base of the vault but there was little standing water. Based upon historical power distribution maps and observations, this vault is considered to have been part of an electrical distribution system. Vault 15 is believed to have been connected to Vault 20. Lot 56.
Manhole 16	Manhole was identified to be a 24" diameter round steel cover. The brick manhole was filled with suds. There is a flow trough in the base and water was flowing. The geophysical survey located a line running west toward Manhole 17 and a line running south/southeast toward Building 10. Lot 57.
Manhole 17	Manhole was identified as a 24" diameter round, steel lid with a wide base flow trough running east/west. Another line was identified as a 6" diameter pipe approximately 1' bgs. The pipe was very degraded and running west before stopping at the manhole. This line was blocked and could not be traced. Suds were found within the water, flowing west toward Riverside Avenue. Lot 1.
Catch Basin 18	Two storm water inlets were identified with steel rectangular shaped grates. Pipes were identified running west beneath a concrete ramp, but could not be further traced. This is a loading/unloading

Manhole/Vault/ Catch Basin ID	Description/Observations
	area and catch basins may be part of a spill containment system during material transfer. Catch basins are filled with soil/debris. Lot 59.
Manhole 19	Manhole 19 is a brick manhole connected to Manholes 16 and 17 based upon the presence of suds. Suds were found within the water that were previously identified in Manholes 16 and 17. Manhole 19 is located on Riverside Avenue.
Vault 20	Vault lid is a round and steel manhole approximately 3' in diameter. There are holes in the lid. Within the concrete vault, there were two lines headed east, each a 4" diameter steel pipe stacked on top of each other between 2-3' bgs. There were also five lines headed south, each having a 4" diameter steel pipe at a depth of approximately 1.5-2' bgs. Steel "L" shaped bars attached to interior walls were observed, and water and debris were in the bottom of the vault. There are no outlets in the bottom portion of the vault. Based upon historical power distribution maps and observations, this vault is considered to have been previously part of an electrical distribution system. Maps show electric lines going from Building 6 (powerhouse) to where Vault 20 is located. Lot 1.
Catch Basin 21	Catch basin was identified to be a steel storm water grate with a line running from the grate east toward the river. The line could not be physically seen, and was only identified by the geophysical survey. No water observed, but catch basin did contain soil/debris. Lot 70.

Photographs of manholes/vaults/catch basins are provided in photograph attachment (page 11). Locations are shown on Figures 1, 2, and 3.

TABLE 2
SEWER PIPES AND SUBSURFACE ANOMALIES
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Line	Lot	Comments
A	67	Unknown subsurface geophysical anomaly; parallel to river, south end is at property line; north end continues at surface waste pile edge. No surface observations or historical maps on cause of anomaly.
B	67	Unknown subsurface geophysical anomaly. River wall to middle of Lot 67. Geophysical survey estimated a depth 2. Southern end is clear end point (geophysical survey). No surface observations or historical maps on cause of anomaly. Vegetation covers river wall in vicinity of Line B end.
C	66	Unknown subsurface geophysical anomaly. Anomaly continued to edge of surface piles. No surface observations or historical maps on possible cause of anomaly.
D	64, 65, 68	Unknown subsurface geophysical anomaly. Clear termination on Lot 68 (geophysical survey). Portion of Line D is in 4'x4' concrete trench between Buildings 12 and 17 (Historical Map #1). Line D connects to water line (geophysical survey) that is between Buildings 7 and 12.
E	63, 65	Herbert Place CSO (geophysical survey, historical maps, observations)
F	63, 66	Sewer line installed by Chemical Compounds Inc. starting at Building 17. Runs between Buildings 7 and 12 and Buildings 6 and 9 to Manhole 10 (geophysical survey, historical maps, observations)
G	64	Unknown subsurface geophysical anomaly. Runs from Building 12 transformers to east under off-property railroad tracks. No surface observations or historical maps on cause of anomaly.
H	63	Unknown subsurface geophysical anomaly. End of line termination on both ends. West end new water line. No surface observations or historical maps on cause of anomaly.
I	63,64	Subsurface utility trench between Buildings 7 and 12 (geophysical survey, observations)
J	64	Unknown subsurface geophysical anomaly. From Building 12 wall to clear line end (geophysical survey). No surface observations or historical maps on cause of anomaly.
K	62, 64	Unknown subsurface geophysical anomaly. Runs from Building 5 soil pile, through USTs into Building 9. Estimated depth 2 feet. No surface observations or historical maps on cause of anomaly. No surface manholes/vaults at change of direction points.
L	1, 62	Subsurface anomaly likely a pipe from Manhole 8 to Building 9. No surface observations or historical maps on cause of anomaly.
M	1	Unknown subsurface geophysical anomaly. Square lines in footprint of Building 4. Clear end of line point (geophysical survey). No surface observations or historical maps on cause of anomaly.
N	63	Unknown subsurface anomaly between Building 7 stairwell and river wall (geophysical survey). No surface observations or historical maps on cause of anomaly.
O	63	Pipe from river wall toward Building 7 transformer area. Observations of pipe at river wall. Clear pipe termination before Building 7 transformers (geophysical survey).
P, Q	66	Two parallel unknown subsurface anomalies. River wall, next to utility pole toward Building 17, geophysical survey estimated depth 1 foot. No surface observations or historical maps on cause of anomaly.

Line	Lot	Comments
R	66	Unknown subsurface geophysical anomaly. From river wall continuing toward Building 17. Estimated depth 2 feet. No surface observations or historical map information on cause of anomaly.
S	61	Unknown subsurface geophysical anomaly under access road along river. Clear termination points at both ends. No surface observations or historical map observations on cause of anomaly.
T	1	Unknown subsurface geophysical anomaly. Front gate to Line Z. No surface observations or historical maps on cause of anomaly.
U	58	Power conduit from guardhouse to Manhole 20 (geophysical survey, historical power distribution map). Estimate depth 3 feet.
V	60	Power conduit from Building 6 (powerhouse) to Manhole 20. (geophysical survey, historical power distribution maps). Estimated depth 2 feet.
W	60	Short subsurface anomaly (geophysical survey). River wall to terminated end. No river wall outlet observed. No surface observations or historical maps on cause of anomaly.
X	1, 57	Power conduit from Manhole 20 to Building 10 (geophysical survey, historical power distribution maps). Estimated depth 2.5 feet.
Y	60	Unknown subsurface geophysical anomaly between Buildings 1 and 10. Estimated depth 3 feet. No surface observations or historical maps on cause of anomaly.
Z	58	Unknown subsurface geophysical anomaly. From AST to Line T. Clear termination end near Manhole 12. No surface observations or historical maps on cause of anomaly.
AA	57, 58	Active sanitary sewer from Manhole 16 to Riverside Avenue (geophysical survey, observations).
BB	70	Pipe from Manhole 21 (catch basin) to river wall. Depth is from 1 foot (Manhole 27) to 2 feet at wall (geophysical survey, observations). No wall outlet observed.
CC	58, 59	Unknown subsurface geophysical anomaly. Between Buildings 14 and 15 to sewer line (Line AA), west of Manhole 17. No surface observations or historical maps on cause of anomaly.
DD	70	Unknown subsurface geophysical anomaly. Asphalt area to Building 16. No surface observations or historical maps on cause of anomaly.
EE	59, 69	Unknown subsurface geophysical anomaly. Between Building 13 loading dock and Building 14. No surface observations or historical maps on cause of anomaly.
FF	59, 69	Unknown subsurface geophysical anomaly. Parallel with Line EE between Buildings 13 and 44. No surface observations or historical maps on cause of anomaly.
GG	69	Unknown subsurface geophysical anomaly. Corner of Building 13 to termination point. No surface observations or historical maps on cause of anomaly.
HH	69	Unknown subsurface geophysical anomaly. Building 19 to river wall. No wall outlet observed. No surface observations or historical maps on cause of anomaly.
II	57, 58	Unknown subsurface geophysical anomaly. Shed next to Building 10 to debris area next to AST on Lot 58. No surface observations or historical maps on cause of anomaly.
KK	1, 62	Sewer line that connects Line F and Manhole 10 (geophysical survey, historical map).

Note: Labeled line designations are shown on Figures 2 and 3.

PHOTOGRAPHS
MANHOLE / VAULT / CATCH BASIN
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NOVEMBER 2017

Manhole 1

Manhole 1

Manhole 2

Vault 3

Manhole 4

Manhole 5

Vault 6 valves

Manhole 8

Manhole 8

Manhole 8

Manhole 10

Manhole 10

Catch Basin 11

Vault 12

Vault 13

Vault 14

Vault 15

Vault 15

Manhole 16

Manhole 17

Catch Basin 18

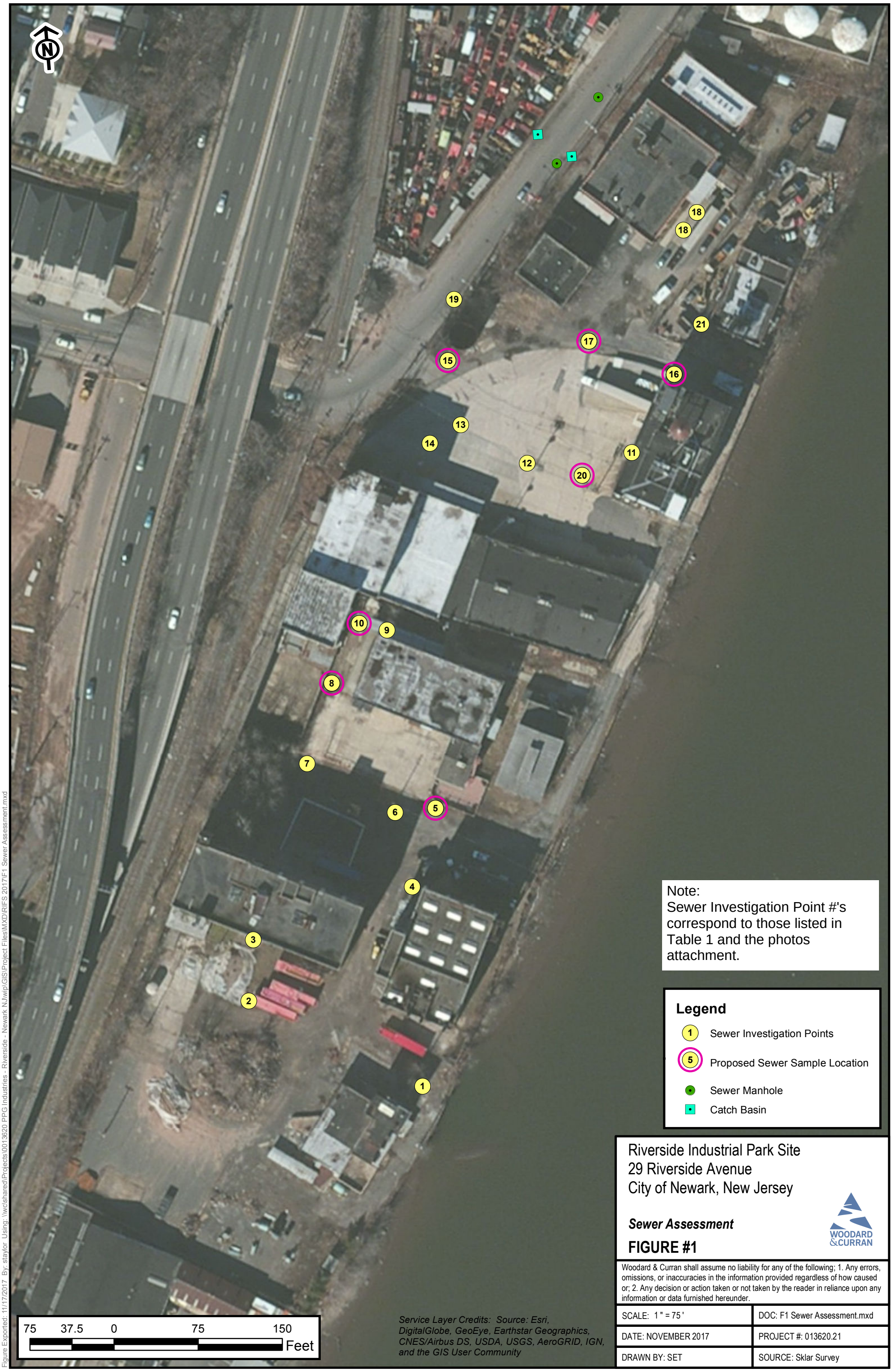
Manhole 19

Vault 20

Vault 20

Vault 20

Catch Basin 21



Note:
Sewer Investigation Point #'s correspond to those listed in Table 1 and the photos attachment.

Legend

- 1 — Sewer Investigation Points
- 5 — Proposed Sewer Sample Location
- Sewer Manhole
- Catch Basin

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Riverside Industrial Park Site
29 Riverside Avenue
City of Newark, New Jersey

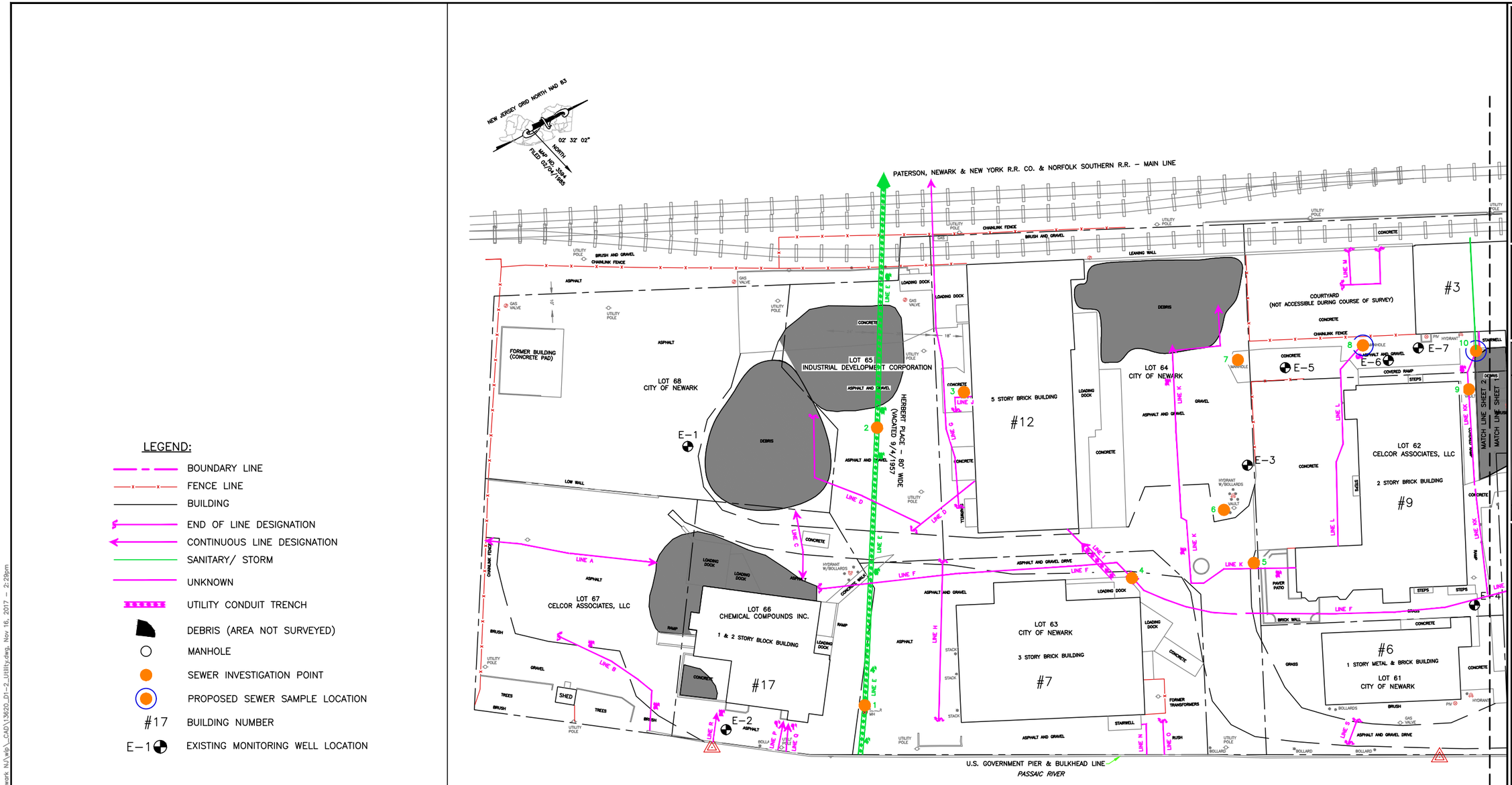
Sewer Assessment

FIGURE #1

WOODARD &CURRAN

SCALE: 1 " = 75 '	DOC: F1 Sewer Assessment.mxd
DATE: NOVEMBER 2017	PROJECT #: 013620.21
DRAWN BY: SET	SOURCE: Sklar Survey

Figure Exported: 11/17/2017 By: staylor Using: \\wc\shared\Projects\013620 PPG Industries - Riverside - Newark NJ\wip\GIS\Project Files\MXD\RIFS 2017\F1 Sewer Assessment.mxd



LEGEND:

- BOUNDARY LINE
- FENCE LINE
- BUILDING
- END OF LINE DESIGNATION
- CONTINUOUS LINE DESIGNATION
- SANITARY/ STORM
- UNKNOWN
- UTILITY CONDUIT TRENCH
- DEBRIS (AREA NOT SURVEYED)
- MANHOLE
- SEWER INVESTIGATION POINT
- PROPOSED SEWER SAMPLE LOCATION
- #17 BUILDING NUMBER
- E-1 EXISTING MONITORING WELL LOCATION

WOODARD & CURRAN
300 Penn Center Blvd., Suite 800
Pittsburgh, Pennsylvania 15235
800.883.3266 | www.woodardcurran.com

REV	DESCRIPTION	DATE
DESIGNED BY: ---	CHECKED BY: B.T.Z.	
DRAWN BY: D.J.M.	13620_01-2_UTILITY.dwg	

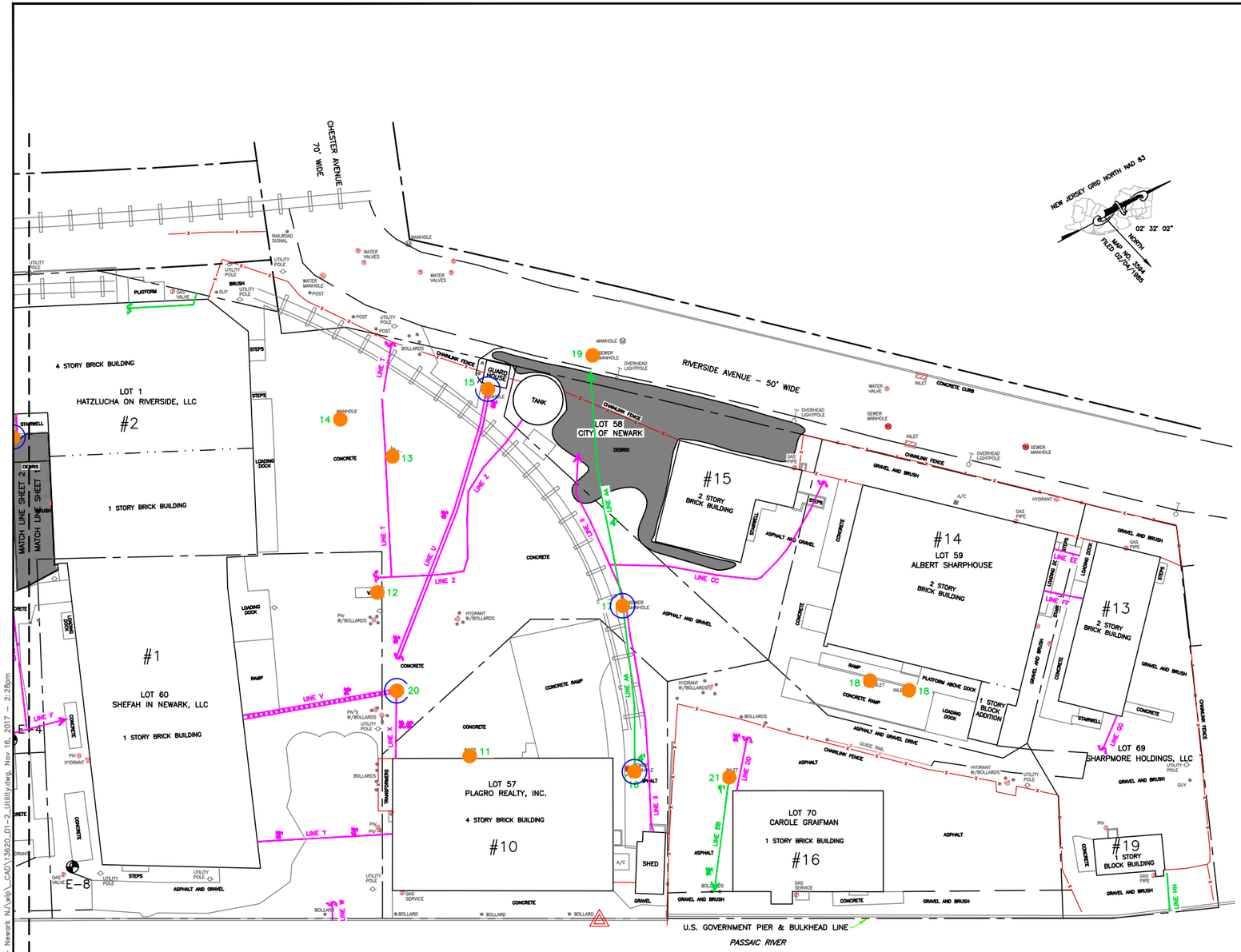
SEWER PIPES AND SUBSURFACE ANAMOLIES – SOUTH

RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614

PPG INDUSTRIES, INC.
NEWARK, NEW JERSEY

JOB NO.:	013620
DATE:	05-16-16
SCALE:	1" = 30'
SHEET:	OF

FIGURE 2



LEGEND:

- BOUNDARY LINE
- FENCE LINE
- BUILDING
- END OF LINE DESIGNATION
- CONTINUOUS LINE DESIGNATION
- SANITARY/ STORM
- UNKNOWN
- UTILITY CONDUIT TRENCH
- DEBRIS (AREA NOT SURVEYED)
- MANHOLE
- SEWER INVESTIGATION POINT
- PROPOSED SEWER SAMPLE LOCATION
- #17 BUILDING NUMBER
- E-1 EXISTING MONITORING WELL LOCATION

WOODARD & CURRAN
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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE
DESIGNED BY: ---	CHECKED BY: B.T.Z.	
DRAWN BY: D.J.M.	13620_D1-2_UTILITY.dwg	

SEWER PIPES AND SUBSURFACE ANOMALIES – NORTH

RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614

PPG INDUSTRIES, INC.
NEWARK, NEW JERSEY

JOB NO.:	013620
DATE:	05-16-16
SCALE:	1" = 30'
SHEET:	0F

FIGURE 3

.

SOP S-23

STANDARD OPERATING PROCEDURE FOR SEWER WATER SAMPLING

Woodard & Curran, Inc.

Application /Overview

The purpose of this Standard Operating Procedure (SOP) is to document both general and specific procedures, methods and considerations to be used and observed when collecting sewer water samples for field screening or laboratory analysis. The sewer water sampling techniques and equipment described herein are designed to minimize effects on the chemical and physical integrity of the sample. If the procedures in these sections are followed, a representative sample of the sewer water should be obtained.

A variety of conditions at different sampling locations requires that judgment be exercised regarding the methodologies and procedures for the collection of representative samples of sewer water from manholes or other subsurface structures (access, depth of water surface, and thickness of water column). This SOP describes manual sampling methods for collecting grab water samples.

Pre-Sampling Evaluation of Sewer Water Sample Location

A pre-evaluation is necessary in order to determine the appropriate sewer water sampling method given current conditions. The pre-evaluation is to be completed prior to sampling, but sampling can proceed immediately following the evaluation given the appropriate sampling equipment is present. Prior to sampling, the presence of water will be visually evaluated (i.e., with flash light) and the depth and thickness of the water column measured using an electronic water level indicator. The sampling device chosen will be based on the depth to water and the measured water column at each location.

Sampling Equipment

The following is a list of equipment that is generally used for sewer water sampling:

- Sample containers and labels.
- Sample collection device (a certified clean, laboratory provided sample transfer container; a dipper or pond sampler; a peristaltic pump; or a stainless-steel Bomb Sampler).
- Peristaltic Pump will be used with Teflon or Teflon-lined tubing and silicon pump head tubing, if chosen as the sampling device.
- Personal protective clothing and equipment as required by a site-specific HASP.
- Photo ionization detector (PID), as appropriate.
- Nylon rope or pole
- Flashlight.
- Water level indicator.
- MultiParameter meter – measures temperature, pH, conductivity, oxygen-reduction potential (ORP), dissolved oxygen. Several makes of these instruments are available for rent from local vendors including the Horiba U-50®, HydroLab Quanta®, QED MP-20®, and YSI 556®.
- Manhole lifting device (magnetic or manual).
- Decontamination equipment and supplies.

- Field logbook or sample collection sheets.
- Insulated cooler and ice.

Sewer Water Sampling Procedure

1. Identify sample locations.
2. Remove manhole or other sewer access cover and complete pre-sampling evaluation described above.
3. Select the appropriate sampling device based on access, water column and depth. Personnel are not to enter the manhole to collect a sample unless confined space and other safety issues are addressed.
4. Where possible disposable sampling equipment and materials will be used. If non-disposable sampling equipment is used ensure equipment has been decontaminated per Woodard & Curran SOP S-16 prior to use.
5. Calibrate MultiParameter meter according to Woodard & Curran SOP S-9 prior to use.
6. Retrieve representative sewer water sample using the chosen equipment and fill laboratory-provided bottleware with sample. Efforts should be made to minimize disturbance of particulates/solids in the sample (i.e. lower slowly into the water). Retrieve a separate aliquot of sample for measurement of field parameters by the MultiParameter meter. If sub-sampling of the primary sample is to be performed in the laboratory, proceed to step 7.
7. If sub-sampling the primary sample in the field or compositing multiple primary samples in the field, place the sample into a certified clean laboratory bottle or other transfer container, then distribute into sample jars according to sample group: volatile organic compounds, semi-volatile organic compounds, PCBs, metals, and lastly any other inorganic compounds.
8. Collect samples in their order of sensitivity to volatilization from most sensitive to least as follows: volatile organic compounds, semi-volatile organic compounds, PCBs, metals, and lastly any other inorganic compounds. Fill QA/QC samples in accordance with the QAPP, work plan, or sampling plan.
9. Record sample characteristics (e.g., sample ID, location, depth, method, description, etc.) as well as the Multiparameter meter readings on field log.
10. Place sample container(s) and appropriate QA/QC samples as specified in the QAPP, work plan, or sampling plan into a sample cooler with ice. (Temperature should be a maximum of 4 +/-2

degrees Celsius (°C) upon laboratory receipt of samples).

11. Complete chain of custody.
12. Decontaminate non-disposable sample equipment per Woodard & Curran SOP S-16.

QA/QC

QA/QC procedures are outlined in the sampling procedures discussed above. Duplicates, blanks, and spikes will be incorporated into the QAPP, work plan, and/or sampling plan to assess potential for sampling, shipping, and laboratory impacts on data quality. Field duplicates are independent samples taken from the same location at approximately the same time. Field duplicate sampling is simply taking a second, independent, follow-up sample at the same location. Field duplicates provide an indicator of overall precision and measure the representativeness of the sample.

For this procedure, collect the regular sample first and then the duplicate for each analyte group in consecutive order (VOC original, VOC duplicate, SVOC original, SVOC duplicate, etc.). Field duplicates should be collected and analyzed at the frequency stated in the work plan, QAPP or sampling plan. Treat the duplicate sample jars just as you would a normal sample.